I CLAIM:

1. A method for manufacturing the end-lengths of plain-end pipe joints so as to provide an integral threaded connection for like joints that may be as strong selectively, as the pipe's mechanical and fluid pressure ratings, comprising: machining a predetermined end-length of the pipe joint so as to effect a desired first configuration; swaging the first configuration to a desired second configuration and swaging the pipe wall opposite the second configuration to a desired third configuration; and then machining the end-length as necessary to effect the desired final dimensions for the end-length.

2. The method of claim 1, further comprising: manufacturing a box by cutting a counterbore of predetermined length so as to provide a desired first inner configuration within the end-length; swaging outwardly, the first configuration into a desired second inner configuration and the outer pipe wall opposite the second configuration into a desired third outer configuration having an outermost diameter larger in dimension than the original pipe outermost diameter; and then machining the end-length to effect the desired final box dimensions.

3. The method of claim 1, further comprising: manufacturing a pin by machining a predetermined end-length of the outer wall of the pipe so as to provide a desired first outer configuration; swaging inwardly, the first configuration into a desired second outer configuration and the pipe bore opposite the second configuration into a desired third inner configuration having an innermost diameter of smaller dimension than the original pipe innermost diameter; and then machining the end-length to the desired final pin dimensions.

4. A box manufactured by the method of claim 2, further comprising: forming tapered box threads dimensioned so as to engage mating pin threads selectively, from a diameter as large as the original pipe outer diameter to a diameter as small as the original pipe bore.

5. A pin manufactured by the method of claim 3, further comprising: forming tapered pin threads dimensioned so as to engage mating box threads selectively, from a diameter as large as the original pipe outer diameter to a diameter as small as the original pipe bore.

6. The method of claim 2 wherein the desired first inner configuration comprises: a substantially conical surface extending substantially from the pipe bore and increasing in diameter toward the pipe end; a second annular surface positioned intermediate the conical surface and pipe end.

7. The method of claim 6, further wherein: the second surface is substantially cylindrical.

8. The method of claim 6, further wherein: the second surface is substantially conical.

9. The method of claim 6, further wherein: the second surface is substantially curved.

10. The method of claim 3 wherein the desired first outer configuration comprises: a substantially conical surface extending substantially from the pipe outer diameter and reducing in diameter

toward the pipe end; and a second annular surface positioned intermediate the conical surface and the pipe end.

11. The method of claim 10, wherein: the second surface is substantially cylindrical.

12. The method of claim 10, wherein: the second surface is substantially conical.

13. The method of claim 10, wherein: the second surface is substantially curved.

14. The box of claim 4, further comprising: the threads being tapered wedgethreads.

15. The pin of claim 5, further comprising: the threads being tapered wedgethreads.

16. The box of claim 4, further comprising: an internal metal-to-metal sealing surface being formed near the small diameter end of the thread, for cooperation with a mating external metal-to-metal sealing surface formed on the mating pin, so as to seal against internal fluid pressure.

17. The box of claim 4, further comprising: an internal metal-to-metal sealing surface being formed near the large diameter end of the thread, for cooperation with a mating external metal-to-metal sealing surface formed on the mating pin, so as to seal against external fluid pressure.

18. The pin of claim 5, further comprising: an external metal-to-metal sealing surface being formed near the large diameter end of the thread, for cooperation with a mating internal metal-to-metal sealing surface formed in the mating box, so as to seal against external fluid pressure.

19. The pin of claim 5, further comprising: an external metal-to-metal sealing surface being formed near the small diameter end of the thread, for cooperation with a mating internal metal-to-metal sealing surface formed in the mating box, so as to seal against internal fluid pressure.

20. The method of claim 2, further comprising: the box being swaged by forcing a suitable swaging mandrel axially into the counterbore.

21. The method of claim 3, further comprising: the pin being swaged by forcing a suitable annular swaging tool axially around the first outer configuration.

22. A box for a high-strength integral pipe connection for joints of plain-end pipe, formed by: cutting a counterbore of predetermined configuration within the end of the pipe; the counterbore having a first conical taper adjacent the pipe end; the counterbore having a second conical taper intermediate the first taper and the pipe bore, the second taper approximating the desired thread taper which is steeper than the first taper, so as to form a desired shaped length of reduced wall thickness; forming at least a portion of the shaped length having the first taper to have an outer diameter greater in dimension than the pipe outer diameter and an inner taper to substantially effect a continuation of the second taper; machining box threads within the pipe end beginning at a diameter selectively as large as the original pipe outer diameter and ending at a diameter selectively as small as the original pipe bore.